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UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service
Dairy Division
Washington, D. C.

RECOMMENDED QUALITY REQUIREMENTS FOR MILK TO BE USED FOR THE MANUFACTURE OF DAIRY PRODUCTS

For Discussion Purposes Only

Agriculture--Washington

PREFACE

Milk is a highly nutritious food, extensively used and essential to the human diet. To preserve its special characteristics, producers and processors should handle it with extreme care. This is necessary so that the products made from the milk will be palatable and wholesome.

Several states have some quality requirements for manufacturing milk and a few segments of the industry also have milk quality requirements applicable to their particular operations. However, these requirements are somewhat lacking in uniformity and therefore do not provide an equitable basis for assessing milk quality nationwide.

These "Recommended Quality Requirements for Milk to be Used for the Manufacture of Dairy Products" are offered as the first step toward establishing such uniform standards. They are designed to promote better care and sanitary practices in milk production and to assure a supply of manufacturing milk of consistently good quality. A companion document has been prepared providing specifications for dairy plant operations. These are designed to assure that processing methods and practices are adequate to produce highest quality dairy products consistent with the quality of the raw milk.

Both the "Recommended Quality Requirements for Milk to be Used for the Manufacture of Dairy Products" and the companion "Recommended Specifications for Dairy Plant Operations" are intended for use by regulatory agencies and industry groups in producing states. They are designed to: (1) encourage the production of good quality milk; (2) promote efficient and sanitary processing; (3) assure stable high

quality dairy products; and (4) increase the appeal of these products and their acceptance by consumers.

The adoption of the recommended quality requirements for manufacturing milk and specifications for dairy plant operations by producing states would be a major forward step in attaining improvement in milk quality and corresponding improvement in product quality and stability. It is recognized that some states may not be ready to initiate section 58.335 paragraph (d), bacterial estimate classification for milk, at the time they adopt the recommended quality requirements. Such states could delay application of the bacterial requirements from one to three years during which time a producer educational program could be inaugurated for milk quality improvement.

The Dairy Division, Agricultural Marketing Service, United States Department of Agriculture gratefully acknowledges valuable assistance and guidance in the formulation of these standards, from numerous technicians representing all segments of the manufacturing milk industry, State universities and colleges, and representatives from other Government agencies. This assistance and guidance was in relation to technical problems and questions in the effort to develop workable standards.

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UNITED STATES DEPARTMENT OF AGRICULTURE RECOMMENDED QUALITY REQUIREMENTS FOR MILK TO BE USED FOR THE MANUFACTURE OF DAIRY PRODUCTS

DEFINITIONS

58.301 Dairy farm.--"Dairy farm" means a place or premises where one or more milking cows are kept, a part or all of the milk being delivered, sold, or offered for sale to a licensed dairy plant manufacturing dairy products.

58.302 Farm certification.--"Farm certification" means that an inspection has been made of the producer's facilities and methods by a fieldman or inspector and that such facilities and methods have been found to be adequate for the production of milk to be used for the manufacture of dairy products.

58.303 Fieldman.--"Fieldman" means a person who is qualified and trained in the sanitary methods of production and handling of milk, and is generally employed by a processing or manufacturing plant for the purpose of dairy farm inspection and quality control work.

58.304 Inspector.--"Inspector" means an employee of the regulatory agency, who is qualified and trained and authorized to perform dairy farm inspections, plant inspections, and/or the grading of raw milk.

58.305 Milk.--"Milk" means the normal lacteal secretion, practically free from colostrum, obtained by the complete milking of one or

more healthy cows located in an area designated by the U. S. Department of Agriculture as a modified accredited area, or from cows in herds fully accredited as tuberculosis-free by the U. S. Department of Agriculture or in the process of being accredited.

58.306 Milk graders.--"Milk grader" means a person employed by the processing or manufacturing plant, who is qualified and trained for the purpose of grading raw milk in accordance with the quality specifications for raw milk contained herein.

58.307 Quality requirements.--"Quality requirements" means the provisions as outlined in Sections 58.320 through 58.335 which includes (a) health of the cows, (b) condition and sanitation of the utensils and equipment, and (c) quality specifications of raw milk.

58.308 Patron or producer.--"Patron" or "producer" means the person (or persons) who exercises control over the milk delivered to a processing plant or receiving station, and who receives payment for this product. A new patron is one who has only recently entered into the production of milk for the market. A transfer patron is one who has been shipping milk to one plant and transfers to another plant.

58.309 Regulatory agency.--"Regulatory agency" means the agency or department of the producing state that has authorized jurisdiction over the production and handling of milk to be used for manufacturing.

58.310 3-A Sanitary Standards.--"3-A Sanitary Standards" means the standards for dairy equipment formulated by the 3-A Sanitary Standards Committees representing the International Association of Milk and Food Sanitarians, the United States Public Health Service, and the Dairy Industry Committee.

I--QUALITY REQUIREMENTS

A. Health of cows

58.320 General health of the herd.--All animals in the herd shall be maintained in a healthy condition. When evidence indicates that it is advisable to do so the regulatory agency may require an examination of the herd by a licensed veterinarian.

58.321 Tuberculin test.--The herd shall be located in a modified accredited area or be fully accredited by the Animal Disease Eradication Division, Agriculture Research Service, U. S. Department of Agriculture or in the process of accreditation.

58.322 Brucellosis test.--The herd shall be located in a Modified Certified Brucellosis Area or shall be under an approved plan of eradication of the Animal Disease Eradication Division, Agricultural Research Service, U. S. Department of Agriculture. Within three years after the adoption of these quality requirements by the state, all milk offered for sale for the manufacture of dairy products shall be from herds having met the Brucellosis requirements of plan A or its equivalent, approved by the U. S. Department of Agriculture for the eradication of brucellosis. All additions to the herd shall be made in compliance with regulations approved by the Animal Disease Eradication Division, Agricultural Research Service, U. S. Department of Agriculture.

58.323 Mastitis.--Abnormal milk from diseased quarters shall be discarded. When cows are treated for mastitis by infusion of the udder, the milk from the treated quarter(s) shall be excluded from the supply for at least 72 hours after the last treatment.

B. Utensils and equipment

58.328 Utensils, cans, bulk tanks, milking machines and other equipment used in the handling, storage, or transfer of milk shall be maintained in good condition, free from rust, open seams, and shall be kept clean and sanitary. All new utensils and equipment shall comply with 3-A Sanitary Standards, where applicable. Clean, suitable storage facilities shall be provided for all utensils and equipment. Utensils and other equipment used in the handling of milk shall be washed after each milking and sanitized immediately prior to use. Bulk farm tanks shall be located in a milkhouse or milkroom in such a way as to be easily accessible for adequate cleaning and service.

C. Quality Specifications and rejection levels for raw milk at the receiving plant

58.335 (a) General.--The inspection of raw milk for manufacture into dairy products shall be based on organoleptic examination (sight and odor) and quality control tests for sediment content and bacterial estimate. All raw milk at receiving point or milk delivered to the receiving station or dairy plant shall be identified as to the producer, seller or shipper from whom received.

(b) Sight and odor.--Each can or farm bulk tank of milk shall be examined by a milk grader for physical characteristics, and off-odors. The milk shall be wholesome and characteristic of normal milk. The flavor and odor of the raw milk shall be fresh and sweet, free from objectionable feed flavors and practically free from off-flavors or off-odors. Any raw milk that shows an abnormal condition (including, but not limited to, curdled, ropy, bloody, mastitic or which contains

toxic substances, antibiotics or other contaminants) or which shows significant bacterial deterioration, as indicated by sight or odor, shall be rejected to the producer, seller or shipper and shall not be used in the processing or manufacturing of dairy products for human food.

(c) Sediment content classification.--For the purpose of quality control and establishing a rejection level of the milk to the producer the following classification of the milk for sediment shall be applicable:

Sediment (off-the-bottom method):

No. 1 - USDA Sediment Standard (not to exceed) 0.50 mg.

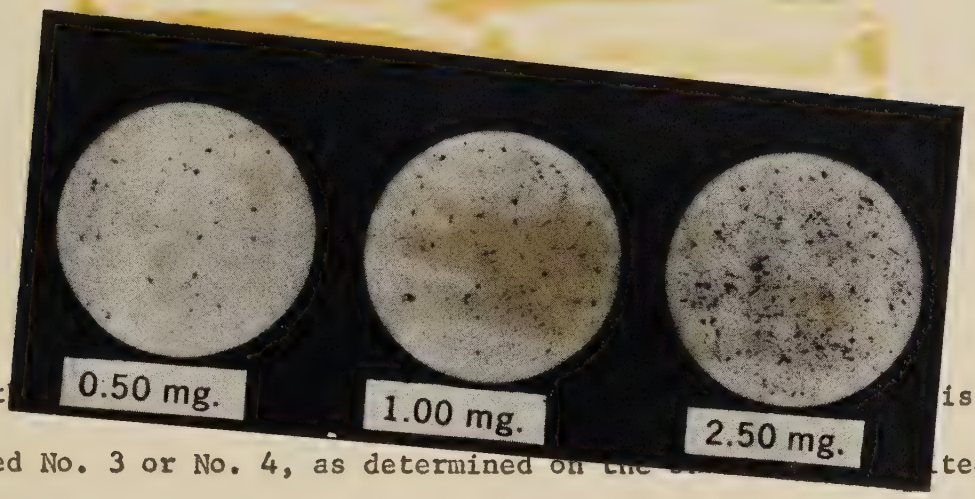
No. 2 - USDA Sediment Standard (not to exceed) 1.00 mg.

No. 3 - USDA Sediment Standard (not to exceed) 2.50 mg.
(Probational) not over 10 days

No. 4 - USDA Sediment Standard (over) 2.50 mg.
(Reject)

At least twice each month, at irregular intervals, one can of milk from each producer shall be selected at random and tested for sediment content by the "off-the-bottom" method of sediment testing as set forth in the latest edition of "Standard Methods for the Examination of Dairy Products" published by the American Public Health Association, 1790 Broadway, New York, New York. The sediment discs taken shall be classified in accordance with the applicable discs of the U. S. Sediment Standards for Milk and Milk Products. A reprint

of these sediment discs is shown below:



If t is classified No. 3 or No. 4, as determined on the ted States Sediment Standards for Milk and Milk Products, all cans in the shipment shall be tested for sediment content and the milk which shows sediment content in excess of 2.50 mg. shall be rejected to the producer. All producers delivering milk with sediment No. 3 or No. 4 shall be notified of the quality of their milk and furnished the applicable sediment disc. All cans of the next shipment shall be tested for sediment and if classified as No. 1 or 2, the milk is in full compliance with respect to sediment. If one or more cans of this retest are found containing sediment of No. 3 or No. 4, all cans of milk are to be retested on the following shipment. This procedure of retesting each can on successive shipments may be continued over a time period not exceeding ten calendar days. If at the end of this time the producer is unable to meet the minimum requirements (No. 2 or better) no more milk shall be received from this producer. (See 58.346 for procedure to obtain reinstatement.)

In the case of milk held in bulk farm tanks a representative sample

shall be taken in accordance with procedure described in "Standard Methods for the Examination of Dairy Products" for bulk sediment testing, which will yield results comparable to the "off-the-bottom" method of sediment testing for individual cans; and such sample shall be properly classified in accordance with the aforementioned United States Sediment Standards for Milk and Milk Products.

(d) Bacterial estimate classification.--For the purpose of quality control and establishing a rejection level of the milk to the producer, the following classification of the milk for bacterial estimate shall be applicable:

Bacterial Estimate Classification	Direct Microscopic Clump Count or Standard Plate Count	Methylene Blue Test Decolorized in	Resazurin Reduction Time to Munsell Color Standard P 7/4
No. 1	not over 200,000 per ml.	not less than 5 1/2 hours	not less than 2 3/4 hours
No. 2	not over 3,000,000 per ml.	not less than 2 1/2 hours	not less than 1 1/2 hours
Undergrade (Probational)	over 3,000,000 per ml.	less than 2 1/2 hours	less than 1 1/2 hours

At least twice each month, at irregular intervals, a bacterial estimate shall be made on a mixed sample of each producer's milk by the direct microscopic clump count, standard plate count, methylene blue test, or resazurin test as set forth in the latest edition of "Standard Method for the Examination of Dairy Products," published

by the American Public Health Association, 1790 Broadway, New York, New York. Other tests may be used to judge the bacteriological quality of milk received at the dairy plant when approved by the regulatory agency.

(e) Acceptable milk.--Acceptable milk is milk that qualifies under Section 58.335, paragraph (b) sight and odor, and that is classified as No. 2 or better for sediment content and No. 2 or better for bacterial estimate.

(f) Probational milk.--(1) Sediment--Milk classified as No. 3 for sediment shall be considered as "Probational Milk" and the period of time in which such milk may be accepted shall not exceed 10 days. (2) Bacterial estimate--Milk classified as Undergrade for bacterial estimate shall be considered as "Probational Milk" and such milk thereafter be tested at least weekly until the milk is found to be No. 2 or better, or is rejected.

(g) Reject milk.--A producer's milk which fails to meet the requirements of paragraph (b) of this section for organoleptic examination or classified as No. 4 for sediment content, or after a period of four weeks continues to be Undergrade for bacterial estimate, shall be considered reject milk. All such milk shall be identified by a reject tag and/or by the addition of a harmless food coloring, in accordance with the applicable regulations of the regulatory agency.

(h) Quality testing of milk from new patrons.--A sediment test shall be made on the first shipment of milk received from a new patron and the milk shall not be accepted unless it qualifies as No. 3 or better. The initial shipment of milk also shall be tested

for bacterial estimate. If it is found to be Undergrade, it shall be retested in accordance with the requirements for regular producers.

(i) Record of tests.--Accurate records, listing the results of quality test on each patron's raw milk, shall be kept on file at the receiving dairy plant for at least 12 months and shall be available for examination by the inspector.

II--PROGRAM OPERATION

58.345 Farm inspection and compliance.--The fieldman or the dairy inspector assigned to the area, shall inspect annually the dairy farm of each producer to determine compliance with the farm requirements (Sections 58.320 through 58.328). A copy of the dairy farm sanitation report shall be furnished the producer and the manager of the receiving dairy plant. The plant manager shall keep his copy on file for at least 24 months.

When the producer has complied with the farm requirements his certification record on file with the plant manager is evidence that he is authorized to sell milk in a market for manufacturing purposes.

When the producer is found to be in noncompliance with the farm requirements a reinspection of the farm shall be made by the fieldman within 30 days after the initial inspection. If not in compliance, the fieldman shall notify the regulatory agency and another inspection shall be made by an inspector of the regulatory agency within 30 days to determine status of compliance. If in noncompliance on this reinspection, the producer's authorization to sell milk for human food shall be suspended by the regulatory agency.

58.346 Producer reinstatement.--When the producer has made the necessary corrections at the dairy farm he may apply to the fieldman or inspector for reinspection, and reinstatement to the market by the regulatory agency.

58.347 Field service.--A fieldman shall visit promptly, and preferably within 3 days, each producer involved in the production of probational or reject milk, for the purpose of inspecting the equipment, utensils, facilities and sanitary practices at the farm and to offer constructive assistance for improvement in the quality of the milk. A copy of the fieldman's inspection report shall be furnished the producer and a copy shall be filed at the dairy plant.

58.348 Exclusion of milk from the market.--The operator of a licensed dairy plant shall not purchase milk from any producer under the following circumstances:

(a) When the milk has been in a Probationary (No. 3) status for sediment content for 10 days, or Undergrade for bacterial estimate for more than four weeks or

(b) When the producer is unable or unwilling to correct conditions on the farm to comply with the quality requirements; except, that when corrections require some capital investment, a reasonable time may be granted by the regulatory agency to complete such improvements, or

(c) When any producer refuses to permit the inspection of his production facilities.

58.349 Notification to regulatory agency.--When a receiving plant discontinues the purchase of milk from a producer for any of

the reasons cited under section 58.348, the operator shall immediately notify the regulatory agency in writing.

58.350 Transfer of records.--When a producer discontinues milk delivery at one plant and begins delivery to a different plant for any reason, he shall first supply the new buyer with a copy of the record of his milk quality covering the past 3 months at his former market, as furnished by the previous buyer, and have a farm inspection promptly made by the new buyer. The milk quality record shall be used along with the farm inspection report to determine acceptability of the milk by the new buyer. The previous buyer shall furnish the producer or the new buyer with a copy of such record within 24 hours upon receipt of a written request signed by the producer, unless such records have been destroyed by means over which he has no control. The new buyer shall not accept the milk of such transfer patron without such record unless the producer furnishes him with a signed statement that the previous buyer has refused to furnish a copy of such record or that such record has been destroyed. The new buyer shall immediately report such failure or refusal to the regulatory agency.

The previous buyer shall report to the regulatory agency the name of any patron who has failed to obtain such a quality record, within 24 hours after discontinuing delivery of milk to his plant, unless such patron has discontinued producing and selling milk.

58.351 Milk graders.--Each plant shall provide one or more milk graders who shall examine each can of milk in accordance with the quality specifications for raw milk contained herein.

58.352 Milk graders--bulk milk haulers.--Tank truck operators who transport milk from producer bulk tanks to the dairy plant, when qualified as milk graders, shall examine each farm tank of milk for odor and physical appearance in accordance with paragraph (b) of Section 58.335. We also shall be trained for taking samples as required for laboratory testing.

58.353 Supervision of program.--The regulatory agency of the producing state shall have responsibility for supervision of the program and the dairy inspector assigned shall:

(a) Check the farm inspection records and quality tests of the milk for individual producers at each dairy plant at periodic intervals.

(b) Give special attention to the quality records of transfer producers and inspect as soon as possible the dairy farm of any such transfer producer unless the plant has on file a satisfactory quality record for the last 90 days from the previous plant.

(c) Check the grading of the milk at each plant to determine that the milk is being graded in accordance with established procedures.

(d) Review the work of each fieldman to determine that he is making proper dairy farm inspections and reports, and compare the results of such inspections with the plant records.

(e) Assist plant management, laboratory and field staffs, with producer educational programs relating to quality improvement of milk.

58.354 USDA survey.--The Inspection and Grading Branch, Dairy Division, Agricultural Marketing Service, United States Department of Agriculture, in conjunction with its responsibility for providing dairy products grading and quality control service, will on a continuing

basis, review the effectiveness of the program operating within each state adopting these production requirements. This will be accomplished by (a) checking the quality of the finished dairy products produced in a state and (b) making spot checks of work performance of milk graders, laboratory anf field staffs and official inspectors, in cooperation with the regulatory agency.

Appendix

The material contained in this Appendix is intended to aid and guide the producer in producing good quality milk. Good quality milk is fresh, clean, sweet milk, which is essential to the manufacture of high quality dairy products.

Proper sanitary practices are essential in the production of good quality milk, possessing a satisfactory flavor and containing a relatively low bacterial count and sediment content. The essential factors in the production of such milk are clean, healthy cows properly fed, clean utensils, effective bactericidal treatment of utensils, prompt cooling of milk to a temperature sufficiently low to retard bacterial growth, and adequate facilities to protect milk during transportation. The producer should take all necessary precautions consistent with the production of a highly perishable food.

A. Housing

Milking barn.--A conventional milking barn, milking parlor or other milking facility should be provided. It is important that the size and arrangement be adequate to prevent overcrowding, promote good health of the cows and permit normal milking operations without impairing the quality of the milk. Swine, fowl or other animals should not be housed or permitted in any part of the milking quarters.

1. Lighting.--The milking quarters should be provided with adequate natural or artificial light, properly distributed throughout, for day or night milking.

2. Ventilation.--To assure the production of clean and wholesome milk and protect the health of the animals the milking

quarters should be ventilated to permit rapid drying of the floors and to prevent dusty air, objectionable odors and condensation.

3. Floors and gutters.--The floors and gutters of the milking quarters should be constructed of concrete or other impervious, easily cleaned material. Floors and gutters should be graded for proper drainage and kept clean and in good repair. When conditions warrant, adequate and suitable bedding should be used and replaced as necessary. Such bedding should be clean, dry and absorbent. Use of ground limestone or other absorbents on floors and gutters is suggested to keep them dry and reduce odors.

4. Walls and ceilings.--The interior walls and ceilings of the milking barn or stable should be kept clean and in good repair. Every milking barn having an overhead storage space should be provided with a dust-tight ceiling. If feed is ground or mixed, or stored in a feed room adjoining the milking area, such room should be separated therefrom by a dust-tight partition and door, however, feed may be stored in the milking portion of the barn, in covered, dust-tight containers. Tight-fitting doors should separate the milking area from the silo entry.

5. Cowyard and loafing shed.--The cowyard should be graded and drained away from the barn, and so kept that there are no standing pools of water or organic waste. Loafing sheds or covered yards, if used, should be provided with sufficient bedding to maintain a reasonably clean dry surface.

6. Manure disposal.--Organic wastes should be removed, and stored or disposed of in a manner that will control the breeding of

flies, and prevent the access of cows to manure piles. In the case of loafing sheds or pen-type stables, clean bedding should be added at frequent intervals to keep the surface of such areas clean and dry.

7. Insect and fly control.--Adequate measures should be taken to control the presence of flies and other insects. Only insecticides approved by the appropriate agency should be used in and around the buildings of the milking area as required. Such insecticides should not be used immediately prior to or during the milking operation.

8. Rodent control.--Precautionary measures should be taken to prevent the harborage of rodents. Only rodenticides approved by the appropriate agency should be used. They should be handled with extreme care and should not be stored or used in the milkhouse or near milking equipment.

B. Feeds

Feeding.--Feed eaten by the cows may affect the flavor of the milk; therefore, silage and other strong feeds that cause off-flavors in milk should be fed only after milking. Hay should not be fed in milking quarters immediately before milking, in order to avoid excessive dust in the air during milking. Weed infestation in pastures should be kept to a minimum by proper management. To prevent or minimize off-flavors in milk, cows should be removed from weed infested pastures or pastures that might cause strong feed flavors and odors in the milk, several hours before milking. Only herbicides approved by the appropriate agency should be used for control of weeds in pastures.

C. Milking

General milking practices.--(a) Udders, teats and flanks.--The flanks, udders, and tails of all milking cows should be clipped frequently as an aid to keeping the cows clean. All brushing in the milking barn or milking parlor should be completed before milking commences. Immediately before milking, the udders and teats should be washed with clean warm water to minimize contamination of the milk. A fresh clean cloth or suitable paper towel should be used to dry the udders and teats. As an alternate method the udders and teats may be cleaned by using a clean towel moistened with a suitable mild sanitizing solution.

(b) Strip-cup.--At each milking a strip cup should be used to check the milk from each quarter. This practice is a good check for detecting mastitis and aids in reducing bacterial counts. When diseased quarters are detected, such cows should be milked last to avoid contamination of the milking equipment and prevent spread of the infection to healthy cows. Milk from infected quarters should be excluded from the regular milk supply.

(c) Milkers' hands.--Milkers should be in general good health and their hands should be washed clean and dried with a clean towel immediately before milking and following any interruption in the milking operation. Production of clean milk demands the exclusion of wet-hand milking. Convenient facilities, including running water, soap and clean towels, should be provided for the washing of the milker's hands. No person with an infected cut or lesion on his hands or arms should milk cows, handle milk or milk utensils.

(d) Milkers' clothing.--Milkers and milk handlers should wear clean outer garments while milking or handling milk, containers or utensils.

(e) Milk stools.--Milk stools, if used, should be constructed to permit easy cleaning and should be kept clean.

(f) Milking machines.--Milking machines should be properly constructed to permit easy cleaning. They should be kept in good repair and operating order. When rubber parts become hard, cracked or otherwise unsatisfactory they should be replaced. To reduce the possibility of sediment in milk the teat cups should be kept well off the floor while attaching or removing the milker.

(g) Pails and strainers.--All milk pails, including milking machine pails, should be kept in good repair and used only for handling milk. Seamless pails are recommended. Strainers, when used, should be so constructed as to utilize single service filter material only.

(h) Cans.--Producer cans should be of such construction (preferably seamless) as to be easily cleaned and kept in good repair. They should be free from open seams, cracks, and substantially free from rust condition or milkstone. It is recommended that all milk cans have an umbrella type cover. Replacement cans should be seamless.

(i) Removal of milk.--When cow-to-can or pipeline milking systems are not used, the milk should be transferred from the milk pail or milking machine into clean milk cans or bulk farm tank. The cans should be placed at such distance and location from the cows as to be protected against extraneous matter. Milk should be taken to the milkhouse or room immediately after milking or preferably after each

can has been filled. Straining of the milk, when practiced, should be done in the milkhouse or in a protected place to prevent contamination.

(j) Cooling.--Cooling of the milk should take place immediately after milking, unless the milk is delivered to a dairy plant within 2 hours. Cooling retards the development of bacteria and increases the keeping properties of milk but cooling should not be relied on as a substitute for sanitary practices. Facilities should be available and in proper working order and of such capacity that the milk may be cooled to 50° F. or less within two hours after milking and should be maintained at that temperature until collected.

(k) Pipeline milking systems (1) Installation.--Pipeline milking systems, when used, should be installed to assure proper operation and adequate cleaning. All milk contact surfaces should meet applicable 3-A Sanitary Standards for material and construction and the lines should be installed with proper slope for adequate self-drainage. The piping should be supported so that the entire line remains in alignment and position. Care should be taken to avoid risers or other conditions which may adversely affect the quality of the milk. Primary lines should be so installed that any change in the elevation of the milk flow will be downward.

The vacuum line leading from the milk receiver should be constructed of stainless steel or other equally impervious material meeting 3-A Sanitary Standards and should be self-draining to the moisture trap.

Milk cocks in the line when not in use should be protected by a sanitary cover.

Systems not intended for in-place cleaning should be readily

demountable. The unit or sections should be no longer than the washing facilities will accommodate.

Systems intended for in-place cleaning should be engineered for the purpose and should be provided with a sanitary circulating system to assure adequate cleaning after each use. Cleaning solution lines should be of the same diameter as the milk lines and should be disconnected from the milk lines during the milking period. A thermometer should be installed in the cleaning solution line for checking the temperature of cleaning solutions and should be maintained in good working order. The milk lines should be installed in a manner that will permit inspection.

(2) Condition and operation.--Pipeline milking systems, or any other milking system, should be operated in a sanitary and satisfactory manner. Any parts or functions of the operation which become defective should be quickly replaced or repaired.

(3) Cleaning.--(i) Pipeline milking systems not designed for C-I-P cleaning by circulation should be completely dismantled after each milking and all pipes and parts thoroughly washed in the same manner as other utensils and equipment. All pipes and parts should be sanitized by circulation with a bactericidal solution circulated through the entire system immediately prior to use. Care should be taken that the solution is well drained from all lines before starting milking.

(ii) Pipeline milking systems when cleaned-in-place require special attention. All parts including the C-I-P solution tank should be of stainless steel or other corrosion resistant material.

Flexible connections, when used, should be capable of withstanding repeated cleaning and bactericidal treatment.

An adequate supply of potable hot and cold water is essential to provide all water needs at the necessary temperatures.

Immediately after milking is completed flush at least five gallons of warm water (110-115° F.) through the entire milk pipeline system, discharging this water to an open drain, until the water appears clear. Rinse and brush the outside surfaces of the milking units.

Immediately after the pre-rinse, circulate through the pipeline system a detergent solution made up of water and a completely dissolved, compatible, non-depositing pipeline cleaner. Follow the recommendations of the detergent and milking machine manufacturers as to the time, temperature and concentration of the solution. The amount of solution should be such that a reserve remains in the wash tank at all times during the cleaning operation. When necessary, an acid cleaner solution prepared according to the manufacturer's directions, may be used in the entire system.

Following the washing operation the milk pipeline system should be thoroughly rinsed and drained. All openings should be capped, or otherwise protected from contamination between milkings.

D. Milkhouse or milkroom

(a) General.--A properly constructed and well equipped milkhouse aids in the production of good quality milk. With such facilities, the work of washing, sanitizing, and storing of utensils and equipment is made easier and more efficient.

(1) Construction (a) Size.--The milkhouse should be of sufficient size to accommodate adequate tank capacity for cooling the milk properly. It should also provide adequate room for the cleaning, sanitizing and storage of equipment and utensils.

(b) Location.--The milkhouse or milkroom should be conveniently located. The milkhouse may be connected to the milking barn by a covered passageway enclosed on at least one side or a vestibule constructed between the barn and milkhouse. When the barn is used only for milking and the feeding of concentrates, and not for the housing of cattle, a direct opening to the milkhouse may be provided by a solid self-closing door. A milking parlor, properly arranged and maintained may also be used for cooling, handling and storing milk, for cleaning, bactericidal treatment and storing of equipment.

(c) Floors, walls and ceilings.--The milkhouse floors should be of concrete or other impervious material, kept in good repair, and sloped to the floor drain. Walls and ceilings should be of tight construction and painted a light color. They should be clean and kept in good repair.

(d) Lighting and ventilation.--Sufficient light should be provided to permit necessary operations day or night. Ventilation should be provided to eliminate odors and excessive moisture. A ventilator should not be located over a bulk tank.

(e) Doors and windows.--All doors should be self-closing and screen doors should swing outward. All windows which open should be properly screened. A separate port opening should be provided if farm bulk tank is used.

2. Equipment (a) Cooling tank or mechanical cooler.--A cooling tank with sufficient water capacity to adequately cool the milk or a mechanical milk cooler, should be provided. The cooling equipment should be so constructed and operated as to maintain the temperature of the milk stored therein at 50° F. or less, within two hours after completion of each milking period.

(b) Bulk cooling.--All bulk tanks should be constructed in accordance with the 3-A Sanitary Standards in effect at the time of installation. All tanks should be located in the milkhouse in such a way as to be easily accessible for adequate cleaning and service. Bulk tanks should not be located directly over a floor drain. After emptying, the bulk tanks should be properly cleaned and should be given bactericidal treatment immediately before next use. The tanks should be maintained in good operating order to assure proper performance of thermometers, agitators and cooling mechanisms. The cooling should begin soon after the addition of the first milk to the tank and continue automatically thereafter, in accordance with the specifications for the tank. When adding warm milk to the cold milk make certain that the agitator is started.

(c) Wash tank.--A two-compartment wash tank should be provided which will drain out properly and which is large enough to accommodate cans and other equipment.

(d) Milk can and utensil racks.--Milk can and utensil racks constructed of metal or equally imprevious material should be provided in the milkhouse or milkroom for proper storage, adequate drainage and air drying of cans, milker pails, strainers and milking machine parts.

The use of racks extends utensil and can life and affords protection against contamination.

(e) Storage cabinet.--A suitable cabinet should be provided for the storage of single service filter material, udder towels, spare milking machine parts, cleansers, and other supplies.

(f) Brushes.--Suitable scrubbing brushes and other brushes should be provided and maintained in good condition.

3. Facilities (a) Hot and cold water.--There should be an adequate supply of potable water available. Heating devices should be provided so that the water can be heated to a temperature of at least 140° F. If oil or gas heaters are used they should be well vented to the outside of the building. The water should be piped into the milkhouse or milkroom.

(b) Hand washing.--Hand washing facilities should be provided, consisting of at least a wash basin, soap and sanitary towels.

(c) Liquid waste disposal.--Waste water from washing should be drained a sufficient distance away from the milkhouse or milkroom to prevent contamination of the water supply and accumulation of waste water on the ground surface.

4. Sanitary practices (a) General.--The windows, shelves, tables, racks and cabinets should be kept clean. The milkhouse should be kept free from trash and articles not used in the milkroom work. Approved insecticides or other effective fly-control measures should be used to control flies. Care should be taken to protect the milk and milkhouse equipment from contamination.

(b) Cleaning and sanitizing.--All utensils and equipment which have come in contact with milk should be rinsed with warm

water (approximately 110-115° F.) immediately after use. The utensils and small parts should then be placed in the washing compartment of the 2-compartment wash tank containing a good cleaning solution, and all parts and surfaces thoroughly brushed. The parts should be rinsed thoroughly in the second compartment containing clean hot water and then placed on the table or rack for draining and drying.

Milking machines should be rinsed while the power is still on by dipping the teat cups into a pail of warm water (approximately 110-115° F.), drawing the water through the cups into the milking pail. Immerse the cups up and down in the water several times to provide turbulence during rinsing. After swirling the rinse water in the milker pail and emptying the rinse water, the procedure should be repeated using hot water containing a good dairy cleanser or detergent-sanitizer. Following this the machine should be disassembled and all parts brushed and washed in the same manner as other utensils. The machine may be placed on a special storage rack and the rubber parts filled completely with a 0.5 percent (1 tablespoon per gallon) solution of lye. The rubber parts should not be stored in a chlorine solution as it tends to harden the rubber and cause checking. As rubber tends to absorb fat, it is good practice to maintain two sets of inflations and hoses and alternate weekly with each set, keeping one set in a strong lye solution for the full seven-day period. This will help to lengthen the life of the rubber parts and keep them clean and pliable. A 5 percent lye solution is recommended (2 pounds, 3 ounces per gallon). If synthetic rubber parts are used the strength of the solution may be only about half as strong. Plastic materials should not be stored in

the lye as they become hard and brittle. When rubber parts are stored for one week in a lye solution, the fat absorbed by the rubber and the lye form a soap-like film on the surface which can be easily brushed off when taken out of the solution. The solution can be reused for one month or more without replacing, if kept up to strength. When using a lye solution care must always be taken; use a suitable container, properly covered.

Farm bulk tanks may be cleaned by several different procedures. The following is one successful method. After the milk has been removed and the tank rinsed with water, remove the agitator and outlet valve. Brush all surfaces including those parts removed, using a good dairy cleanser, then rinse thoroughly, reassemble and close the covers.

(c) Bactericidal treatment.--Immediately before use, the milk contact surfaces of all utensils, parts and equipment should be given a bactericidal treatment consisting of an effective concentration of chlorine (100 ppm for rinse or 500 ppm for fog spray) or should be treated by any other approved method giving equivalent results for bacterial destruction.

E. Farm Facilities

(1) Water Supply.--Water for all dairy purposes should be from a supply properly located, protected and operated and should be easily accessible, adequate, and of a safe, sanitary quality. It may be from a public water supply, private spring, or a well. Precaution should be taken at all times to avoid contamination of the supply.

(2) Toilet and sewage disposal.--Every dairy farm should be provided with one or more toilets properly constructed and maintained in good condition. If a flush toilet is provided it should be properly connected to a septic tank, properly located and constructed, or to a sanitary sewer. A pit privy, when provided, should be of tight construction, properly covered, protected from flies and equipped with a self-closing door. The privy should be properly located with respect to distance from water supply.

F. Transportation and protection of raw milk in transit

Hauling of milk.--Vehicles used for the transportation of milk should be of the enclosed type, constructed and operated to protect the product from extreme temperatures, dust or other adverse conditions, and should be kept clean. Cans used for transportation of milk should not be used for transportation of skim milk, buttermilk or whey to producers.

Milk transportation tanks, sanitary piping, fittings and pumps, should be cleaned and sanitized at least once each day and more frequently if necessary. If the tank is not to be used immediately for the pick up of another load of milk it should be washed promptly after each day's use, and given bactericidal treatment immediately before using. The outside of the tank truck should be maintained in a clean condition. New and replacement tank trucks should meet the 3-A Sanitary Standards for Milk Transportation Tanks.

7-2-59

Dairy Farm Sanitation Report

FACILITIES

Producer_____ /Date_____

Address_____ /Time a.m. p.m.

Person Interviewed_____

Name of receiving plant_____

	Score Allowed	Score Given	% Compliance
1. Health of Cows			
(a) Appear healthy and in good condition	2		
(b) Tuberculin tested date_____	4		
(c) Brucellosis tested			
Ring test _____ blood test_____	4		
(d) Mastitis program practiced	2		
	12		
2. Milking area			
(x)( ) conventional milking barn			
(x)( ) loose housing and milking parlor			
(a) adequate size	3		
(b) adequate light	3		
(c) adequate ventilation	3		
(d) impervious floors and gutters - good repair - proper drainage	5		
(e) walls and ceilings tight	2		
(f) cow yard properly graded and drained	4		
	20		
3. Milk house or room			
(a) adequate size	2		
(b) adequate light	2		
(c) adequate ventilation	2		
(d) impervious floor - good repair - proper drainage	2		
(e) walls and ceilings tight	2		
(f) self-closing doors or screen doors	1		
(g) proper port opening if bulk tank used	1		
(h) adequate hot and cold water	2		
(i) adequate hand washing facilities	1		
(j) cabinet for storage of miscellaneous supplies	1		
	16		
4. Utensils and equipment			
(a) materials smooth, corrosion resistant, nontoxic, easily cleanable	4		
(b) joints and seams tight, easily cleanable	2		
(c) metal storage rack or suitable table	2		
(d) two-compartment wash tank and rinse vat	4		
(e) adequate brushes and cleaning materials	4		
	16		

	Score Allowed	Score Given	% Compliance
5. Cooling facilities			
(x)( ) method used			
(a) adequate to cool each milking to 50° F. or lower	12		
(b) adequate to maintain temperature at 50° F. or lower	8		
	20		
6. Water supply			
(x)( ) well _____ spring _____ gravity _____ pump pressure _____			
(a) properly located and installed	4		
(b) storage tank, if used, properly constructed	4		
	8		
7. Toilet and Sewage disposal			
(x)( ) privy _____ flush type _____			
(a) properly located	4		
(b) properly constructed	4		
	8		
SANITARY METHODS			
8. Milking procedure			
(x)( ) method used (circle one) hand, machine, pipeline			
(a) cows clean	8		
(b) udders, flanks and tails clipped	4		
(c) udders, teats washed before milking	12		
(d) milkers hands clean, dry	12		
(e) milkers clothing clean	4		
(f) strip cup used - abnormal milk discarded	8		
(g) single service strainer pads used	8		
(h) milk moved promptly to milk house	4		
	60		
9. Milking area			
(a) walls and ceilings clean	4		
(b) floors and gutters clean	8		
(c) flies controlled to minimum	4		
(d) free from other animals	4		
(e) bedding ample and clean	8		
(f) manure removed daily	4		
(g) manure storage inaccessible to cows	4		
(h) barnyard clean	4		
(i) loose housing properly maintained	4		
(j) milk stools, surcingles, clean	4		
	48		

		Score Allowed	Score Given	% Compliance
10.	Milk house or room			
	(a) floors, walls, ceilings, windows clean	12		
	(b) flies controlled to minimum	8		
	(c) used for milk handling only	4		
	(d) free from unnecessary articles or trash	4		
	(e) surroundings clean	4		
		32		
11.	Utensils and equipment			
	(a) clean, good repair	16		
	(b) brushed daily using dairy cleaner	8		
	(c) utensils and parts properly stored	8		
	(d) bactericidal treated before use	16		
	(e) milking machine dismantled or stored on lye rack	16		
	(f) cans satisfactory condition before filling	8		
	(g) bulk tank (if used) thoroughly cleaned after each emptying .			
		72		
12.	Cooling milk			
	(a) cooler or tank, good operating order	8		
	(b) cooler or tank, clean	16		
	(c) milk cooled immediately to 50° F. or lower after each milking	12		
	(d) milk held at 50° F. or lower until picked up	12		
		48		
13.	Toilet and sewage disposal			
	(a) sanitary maintenance	4		
	(b) sewage and waste	4		
		8		
14.	Water supply			
	(a) well covers, pits, pump seals good repair	12		
	(b) cisterns or tanks (if any) clean, good condition	8		
		20		
15.	General premises			
	(a) neat, clean	6		
	(b) free from insect breeding and rodent harborages	6		
		12		

Note: A total of 90% for each of the items 1, 4, and 11, shall be considered acceptable.

All other items shall be rated as a guide toward quality improvement only, and the scores of each category shall be used to classify the farm as follows:

Excellent	90	no category less than 80
Good	80	no category less than 70
Fair	70	no category less than 60
Poor	60	no category less than 50

Remarks:

On the basis of this inspection (reinspection) the producer is (is not) in compliance with the necessary farm requirements for selling milk for manufacturing purposes.

_____

Fieldman